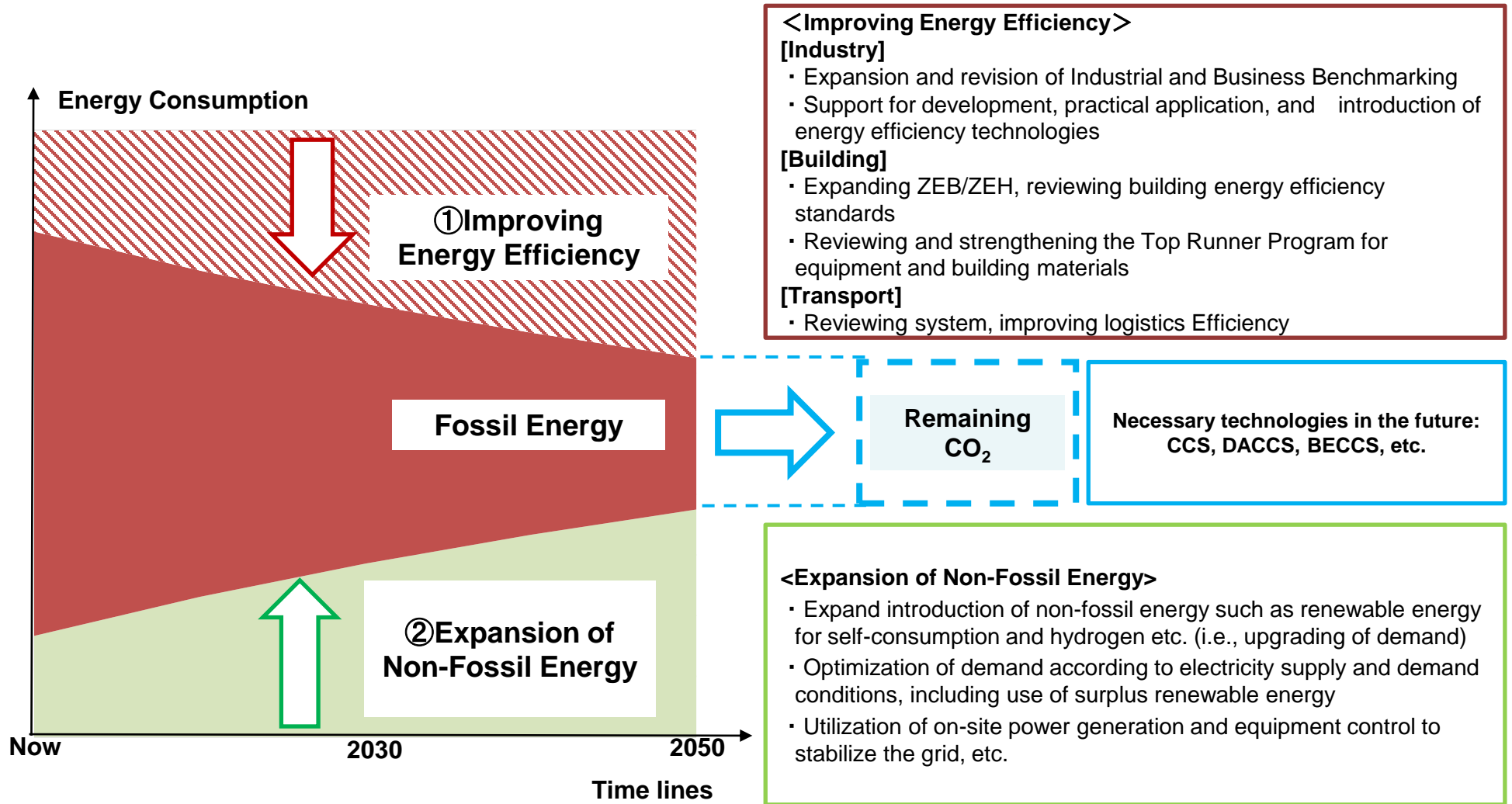


The Evolution of Energy Efficiency Policy to Support Clean Energy Transition

Ministry of Economy, Trade and Industry (METI), Japan

The Evolution of Energy Efficiency Policy to Support Clean Energy Transition



The Overview of Demand-side Policies: Regulation and Incentives

Regulation

Energy Conservation Act

(the Act on Rationalizing Energy Use and Shifting to Non-fossil Energy)

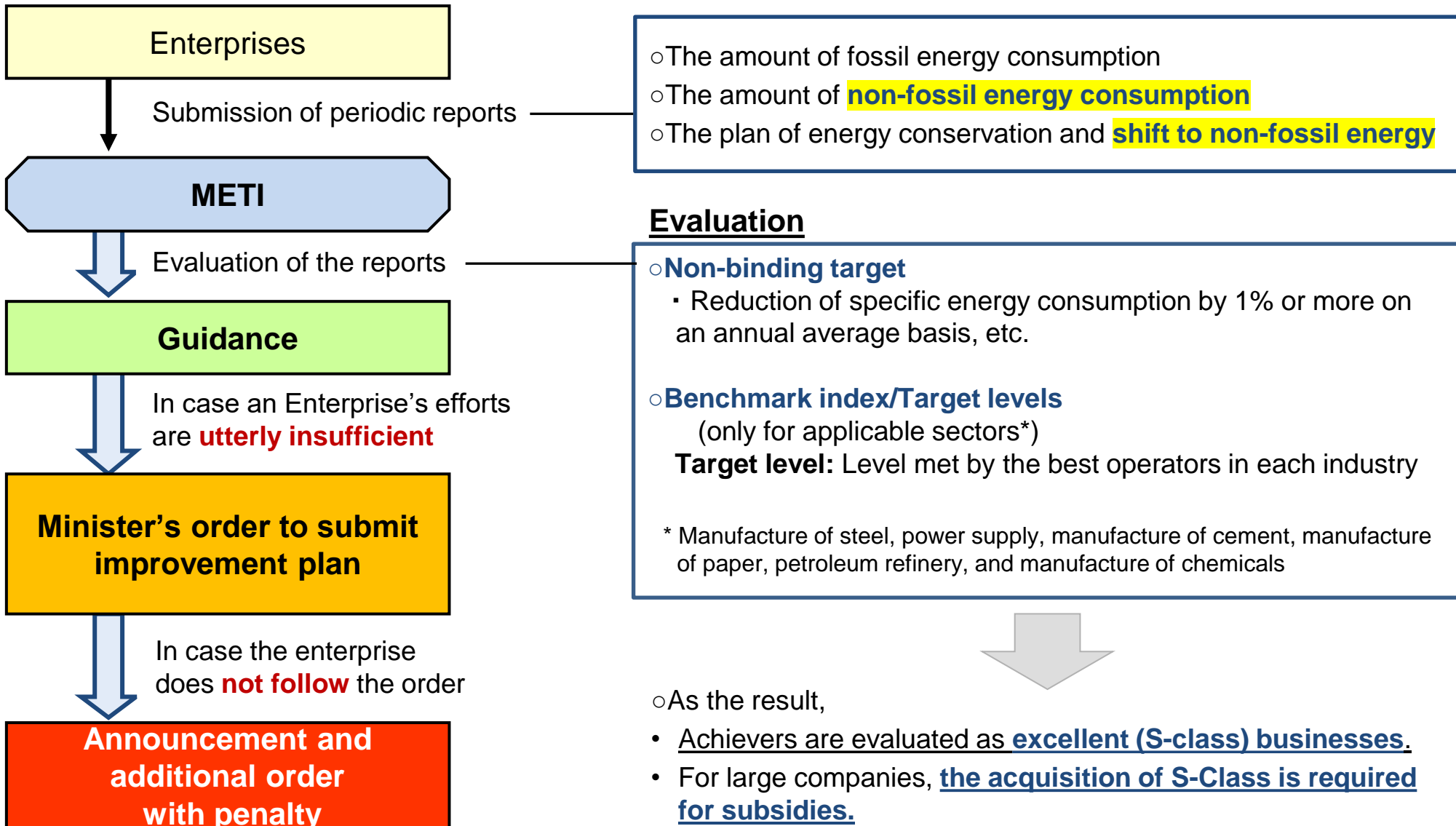
- Reporting obligation for large-scale enterprises
- Requirement to achieve energy efficiency criteria for manufacturers (called “Top Runner Program”)

Incentives

Energy Conservation Subsidies Package (2022/2023)

- Replacing inefficient facilities
- Experts’ advice for SMEs
- Insulation retrofitting and residential water heater (heat pumps)

Energy Conservation Act: (1) Reporting obligation for large-scale enterprises



Energy Conservation Act: (1) Reporting obligation for large-scale enterprises

1979.

The Act on Rationalizing Energy Use

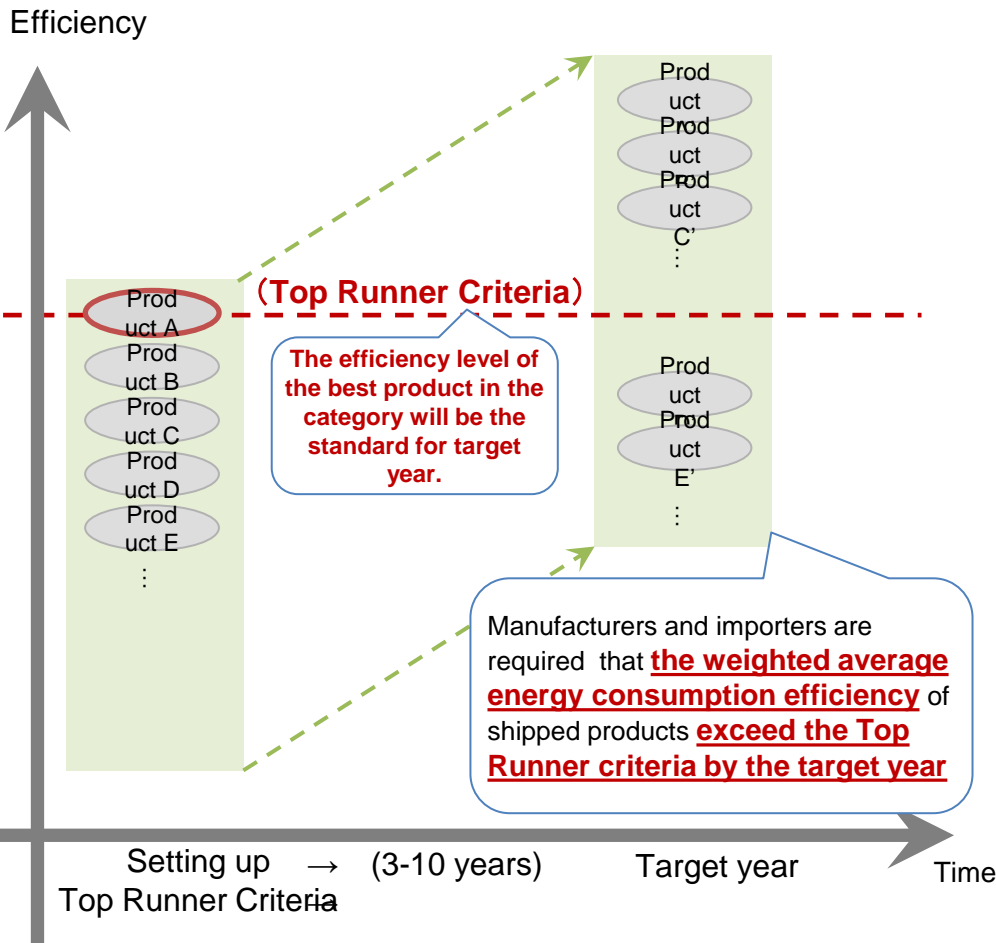


2022.

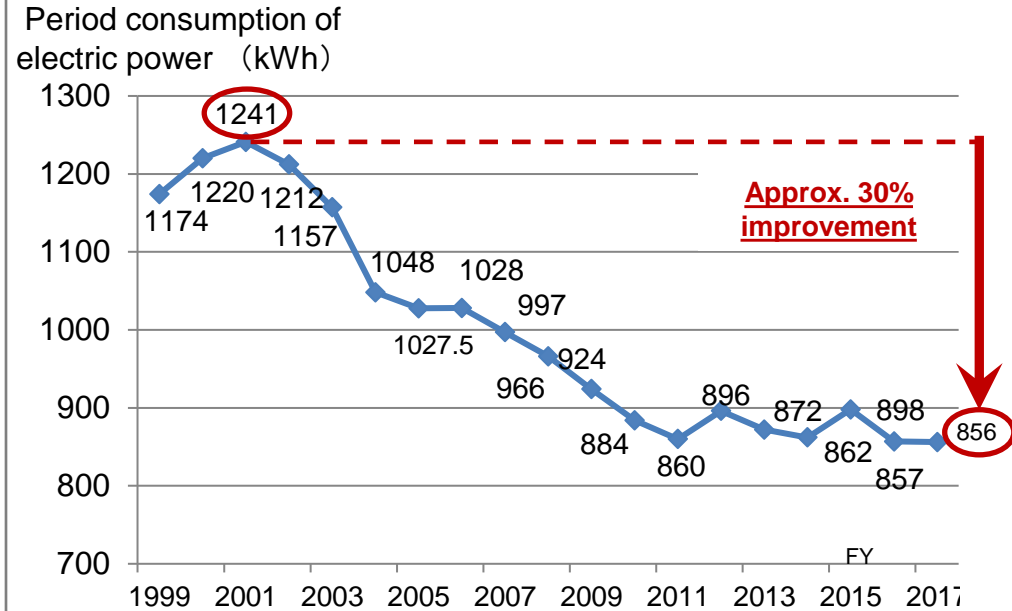
The Act on Rationalizing Energy Use and Shifting to Non-fossil Energy

Energy Conservation Act: (2) Requirement for Manufacturers

How Top Runner Program Works



The Outcome Example: Air-conditioners

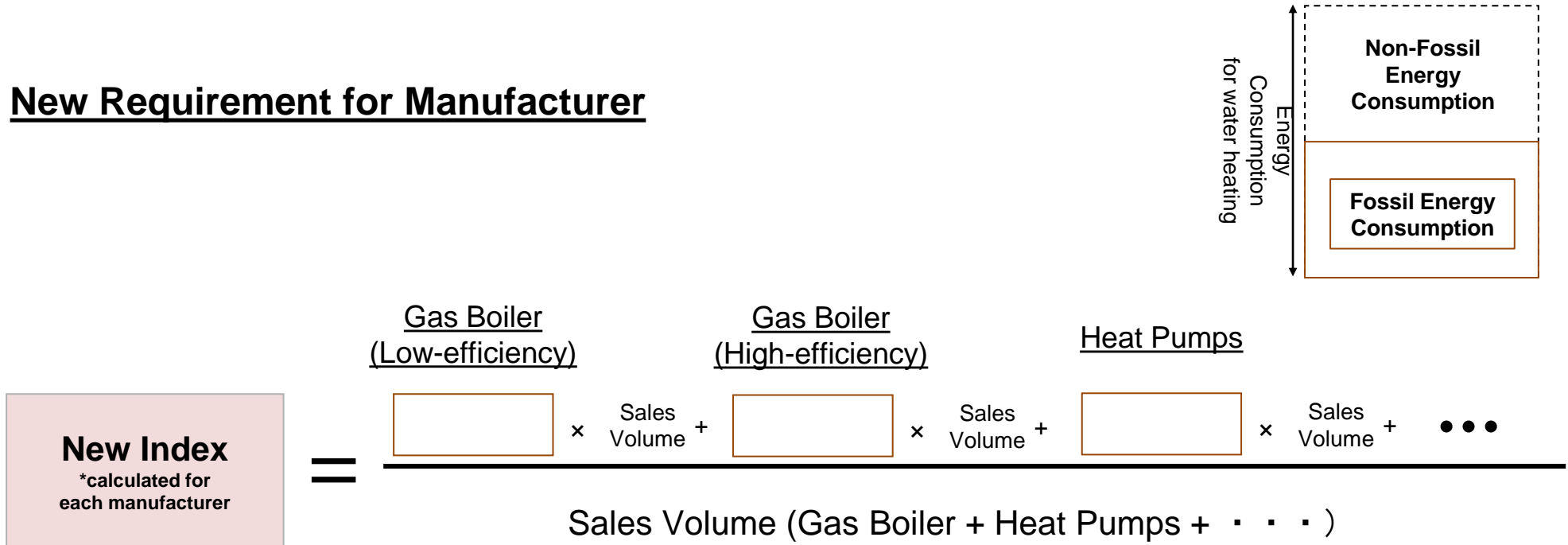


- Trends in simple averages for air-conditioners (Cooling capacity 2.8kW (14.6 - 21.9m²))
 - The period consumption of electric power is based on JIS C 9612:2005
- Source: Energy efficiency performance catalogs of each FY (summer, winter)

Energy Conservation Act: (2) Requirement for Manufacturers

Under Discussion
in Public Committee

New Requirement for Manufacturer



Each Manufacturer of Water Heater will be required to achieve the target index*

*The target index need to be set with consideration that energy demand depends on climate, the size of the tanks, and etc.

Incentives: Energy Conservation Subsidies Package

		Dec. 2022	Dec. 2023
Businesses	Replacing inefficient facilities	500 billion JPY = 3.2 billion EUR (the amount of next 3 years)	700 billion JPY = 4.5 billion EUR (the amount of next 3 years)
	Experts' advice for SMEs	2 billion JPY = 12.7million EUR	2.1 billion JPY = 13.3 million EUR
Households	Insulation Retrofitting	280 billion JPY = 1.8 billion EUR	420 billion JPY = 2.7 billion EUR
	Residential Water Heater		

Incentives: (1) Replacing inefficient facilities

Type 1: Energy efficiency improvement throughout the plant or building

Improvement Rate: **10%** or Reduction of Energy Consumption **700kloe**

New

Type 2: Select facilities from the list

***Specialized for Electrification and Fuel Switching**

Coal Furnace



Electric Furnace



*Facilities example

Type 3: Select facilities from the list

Heat Pumps



Air Conditioner



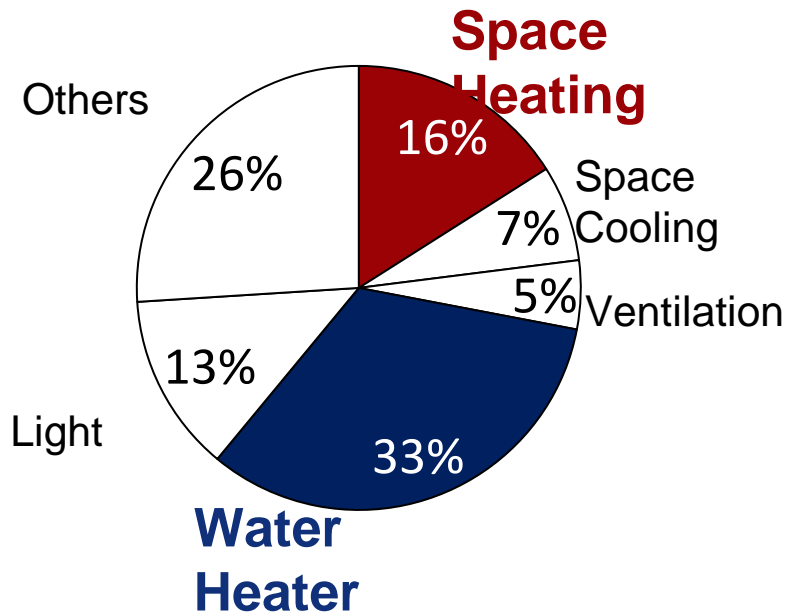
Motors



*Facilities example

Incentives: (2) Residential Water Heater

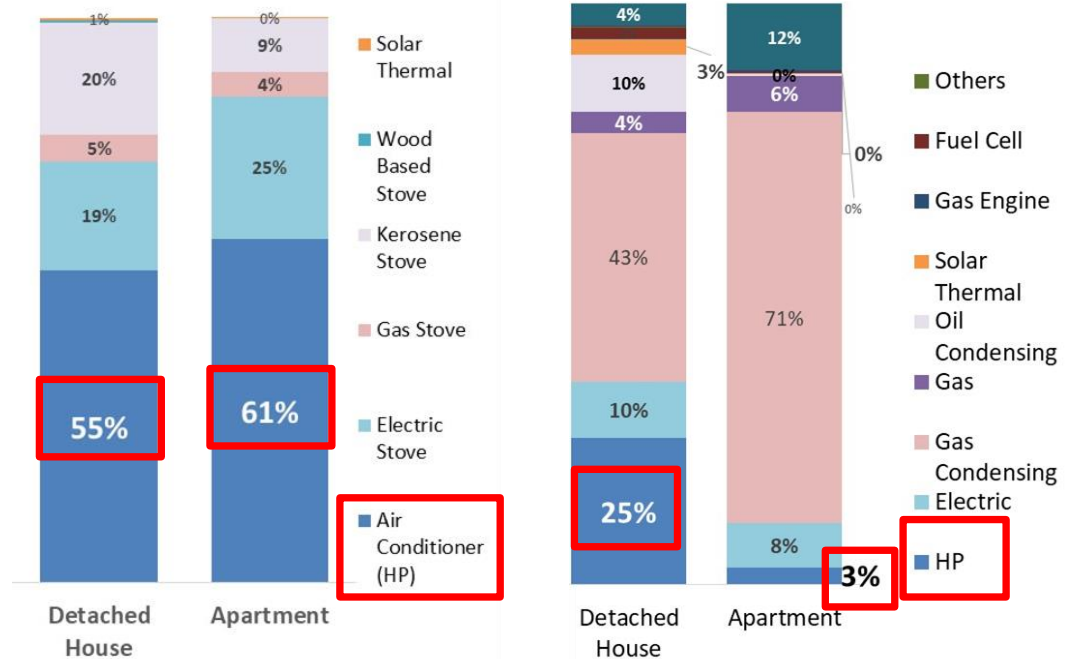
Household Energy Consumption



- While central-heating system (with water heater) is the main system of space heating in Europe, individual-heating system (with air conditioner) is the main system of space heating in Japan.
- Japan people habitually take a bath, so water heater occupies 33% of the household energy consumption.

Space Heating Equipment

Water Heater



*each graph shows warmer climate case

Incentives: (2) Residential Water Heater

	Subsidy for Owners (2022)	Subsidy for Owners (2023)
① Heat Pump Water Heater	50,000 Yen/unit	100,000 Yen/unit
② Hybrid Water Heater	50,000 Yen/unit	130,000 Yen/unit
③ Residential Fuel Cell	150,000 Yen/unit	200,000 Yen/unit

① Heat Pump Water Heater



Source: Panasonic

② Hybrid Water Heater



Source: Rinnai

③ Residential Fuel Cell



Source: Aisin Corp.

Incentives: (2) Residential Water Heater

Heat Pump Water Heater



Source: Panasonic

Hybrid Water Heater

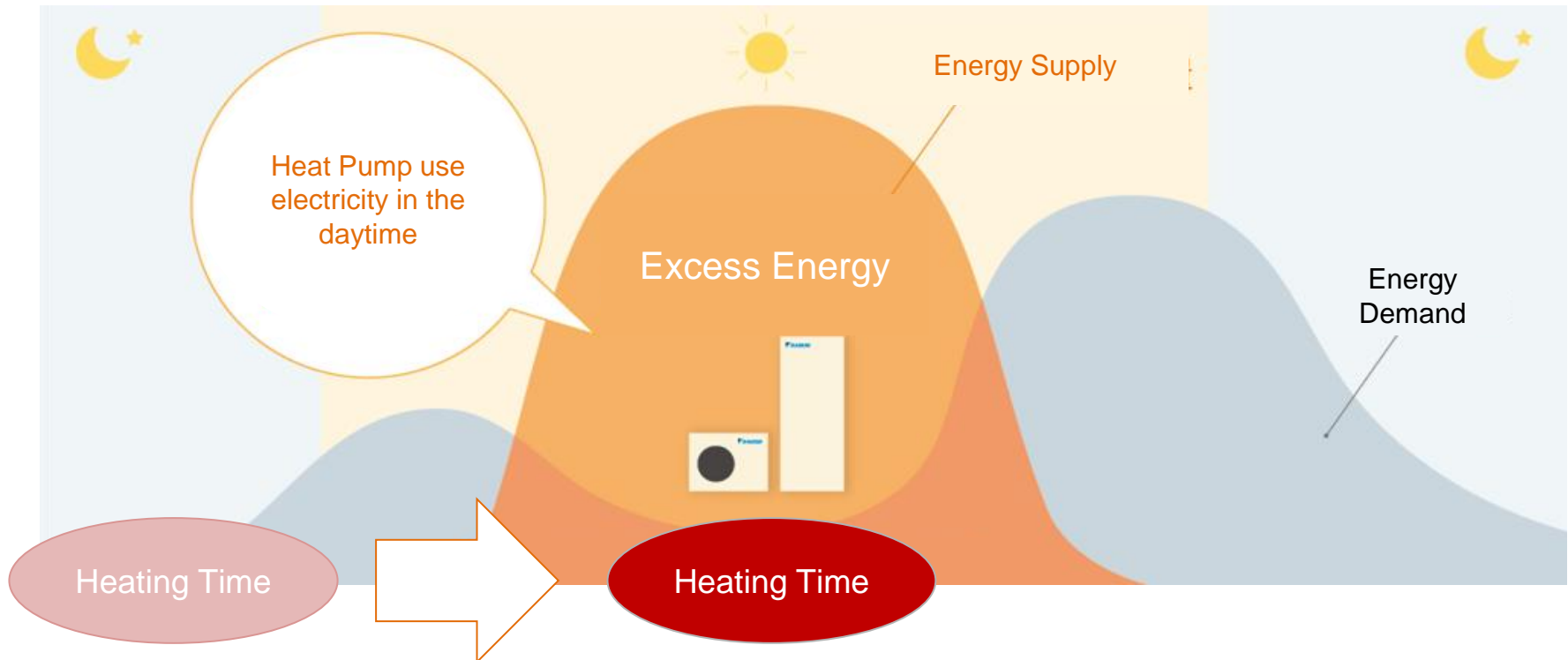


Source: Rinnai

Non-DR-Ready
Water Heater

DR-Ready*
Water Heater

+10,000~20,000 JPY



*The definition of "DR-Ready" is under discussion. Described just means the water heater controller can connect to the internet and shift heating time.

G7 Communiqué: “Energy Efficiency First” and Developing demand side policies

G7 Hiroshima Leaders’ Communiqué

Energy - 25.

“Through our experience in coping with past and current energy crises, we highlight the importance of **enhanced energy efficiency and savings as the “first fuel”**, and of **developing demand side energy policies.**”

G7 Climate, Energy and Environment Ministers’ Communiqué

63. Energy efficiency.

• • • We underline the need for ‘**energy efficiency first**’ to be recognized as a driving principle for our actions to ensure that energy efficiency and energy savings are duly taken into consideration in policy, planning and investment decisions. We also note that **energy efficiency regulations**, such as vehicle fuel efficiency regulations, building codes, minimum energy performance standards, energy performance certificates, and energy reporting systems for large scale consumers continue to gain momentum. **These measures will leverage further efforts to decarbonize energy demand**, with strategic approaches including electrification, fuel switching, grid flexibility, digitalization of energy demand information and disclosure of energy and climate related information. • • •

End of Document
